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CHEMICAL CONTROL OF CUCURBIT MITE, *TETRANYCHUS CUCURBITAE* RAHMAN AND SAPRA ATTACKING BITTER GOURD

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Four different insecticides/acaricides viz, nuvacron 40 Scw, monitor 50 EC, plictran 50 WP and danitol 10 EC each in two different doses of 0.05 and 0.1% were tried against cucurbit mite, *Tetranychus cucurbitae* Rahman and Sapra, a serious pest of cucurbit vegetables especially bitter gourd. All the four insecticides/acaricides proved quite effective in controlling the pest. Nuvacron 0.1%, however, gave the highest mortality of 100% and 98.19%, respectively, of nymphs and adults, while danitol 0.05% gave the minimum mortality of 27.55% and 24.14%, respectively, of nymphs and adults at 96 hours after spray.

INTRODUCTION

The attack of vegetable mite, *Tetranychus cucurbitae* Rahman and Sapra is usually very common on bitter-gourd, causing serious losses in the years of heavy infestation. Although the biology of this mite has been extensively studied, yet very few attempts have been made in Pakistan to find out effective and economic control of this injurious species.

In other parts of the world workers like Basu and Pramanik (1969), Singh *et al.*, (1975), Dhooria and Mann (1980), Gera (1980) and Pande and Reddy (1982) tried different pesticides for the control of *Tetranychus* spp. on different crops and obtained good control of this serious pest. The informations regarding chemical control of this pest species in Pakistan is rather scanty. Mohsin (1963) conducted research on the control of *Tetranychus* spp. in this region using two acaricides viz. duphar tedion V-18 and phankapton and obtained good control of the pest.

MATERIALS AND METHODS

The experiment was conducted in the Entomological Research Area, University of Agri., Faisalabad following Randomized Complete Block Design.

There were in all 9 treatments including a check. The treatments were repeated thrice. Four insecticides/acaricides viz., nuvacron 40 SCW, monitor 50 EC, plictran 50 WP and danitol 10 EC each in 0.05 and 0.1 per cent concentrations were applied. For population counts, 3 leaves, one each from top middle and bottom portions of each of 5 randomly, selected plants per plots were selected. The population from each leaf was recorded from 3 different spots, with the help of a card board square of 1 cm dimensions, under a binocular microscope. Observations were recorded 24 hours before spray and then after 24, 48, 72 and 96 hours of each spray.

RESULTS AND DISCUSSION

The percentage mortality of nymphs and adults of *Tetranychus cucurbitae* Rahman and Sapra attacking bitter-gourd, obtained after different time intevals of spray is given in Table 1 and presented graphically in figures 1 and 2.

The data given in Table 1 indicate that nuvacron 0.1% proved to be the most effective with 100 and 98.19% mortality of nymphs and adults, respectively closely follwed by plictran 0.1 %, nuvacron 0.05 % and plictran 0.05 % which gave 87.70 and 85.26, 84.19 and 80.35, 76.71 and 72.92% mortality of nymphs and adults, respectively, at 96 hours after spray. Mortality increased with the passage of time in all the treatments except in danitol 0.1% in which the maximum mortality recorded was 54.13% and 51.21% respectively, in nymphs and adults at 48 hours after spray and it started decreasing thereafter and the lowest mortality was recorded in case of danitol 0.05% i. e 27.55 and 24.14% respecti vely, in nymphs and adults after 96 hours of spray.

The nymphs of this mite were more susceptable thau adults as their mortality was more than adults in case of all the insecticides/acaricidec tested. It is difficult to compare the findings of the present authors with those of Mohsin (1963), Baus and Pramanik (1969). Gera (1980), and Pande and Reddy (1982) because they tried different pesticides in different concentrations against different species of mites. However, Singh *et al.* (1975) aud Dhooria and Mann (1980) obtained similar result with nuvacron against *Tetranychus cucurbitae* Rahman and Sapra as the present investigations revealed.

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Table 1. *Per cent mortality of nymphs and adults of Trtranychus cucurbitae Rahman and Sapra attacking bitter-gourd.*

Treatments	Concentration	Average Population 24 hour before spray		Hours after spray (Per cent mortality)							
				24		48		72		96	
				N	A	N	A	N	A	N	A
Nuvacron 40 SCW	0.05	.46	.66	70.15	67.92	77,50	75.58	80.24	77,70	84.19	80.35
Nuvacron 40 SCW	0. 1	.43	.61	80.46	78.44	84.44	81.46	89.70	86.52	100.00	98.19
Monitor 50 EC	0.05	.63	.64	37.25	32.36	44.67	40.86	56.00	49.24	60.34	51.60
Monitor 50 EC	0. 1	.64	.65	49.41	37.10	56.94	40.50	64.30	54.23	64.88	62.12
Plictran 50 WP	0.05	.50	.62	67.21	60.76	74.31	68.74	75.26	71.48	76.71	74.92
Plictran 50 WP	0. 1	.42	.61	72.14	71.10	79.97	78.08	82.33	79.36	87.70	685.2
Danitol 10 EC	0.05	.54	.76	39.87	35.07	44.43	38.25	33.18	33.65	27.55	24.14
Danitol 10 EC	0. 1	.52	.60	49.52	44.41	54.13	51.21	46.91	37.55	33.98	29.42

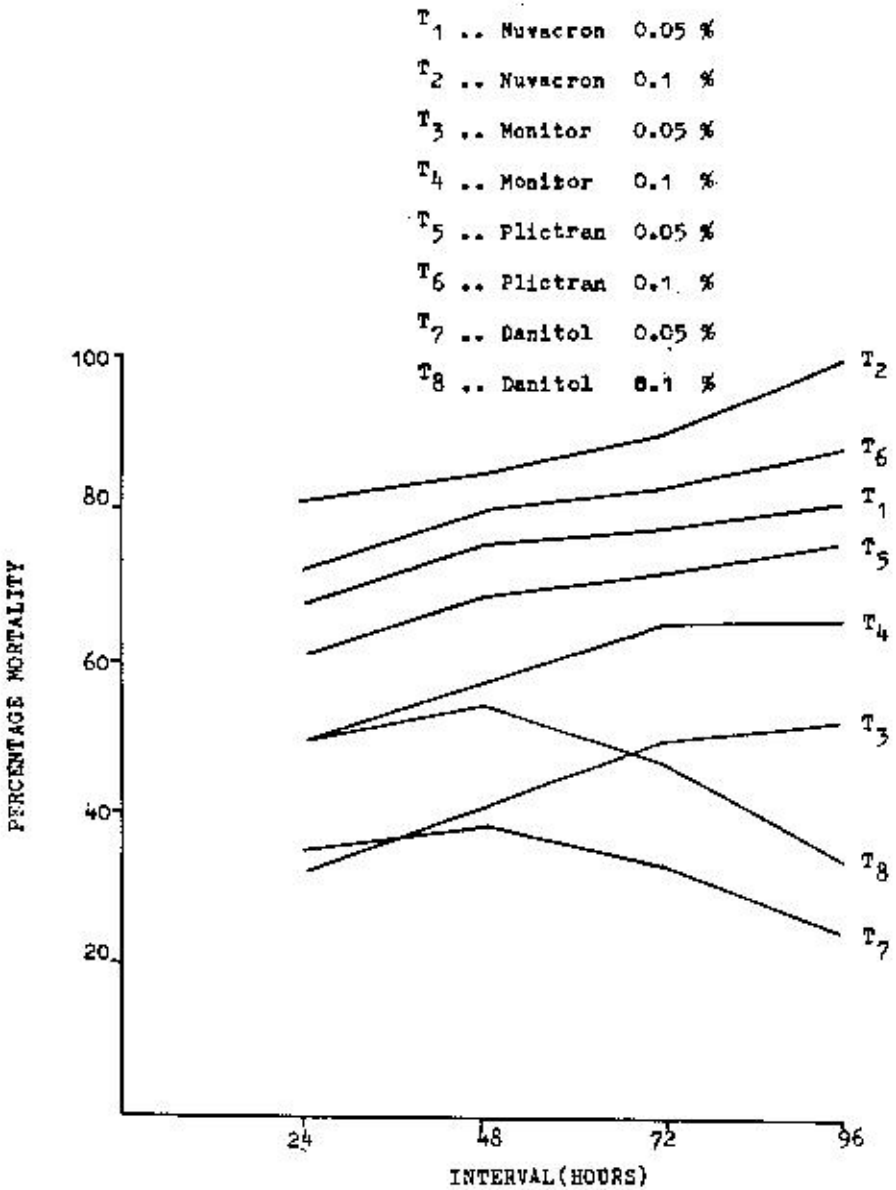

Fig. 1. Percentage mortality of nymphs of Tetranychus cucurbitae Rahman and Sapra with different insecticides/acaricides at different post-treatment time intervals.

T_1 .. Nuvacron 0.05 %

T_2.. Nuvacron 0.1 %

T_3.. Monitor 0.05 %

T_4 .. Monitor 0.1 %

T_5 .. Plictran 0.05 %

T_6 .. Plictran 0.1 %

T_7 .. Danitol 0.05 %

T_8 .. Danitol 0.1 %

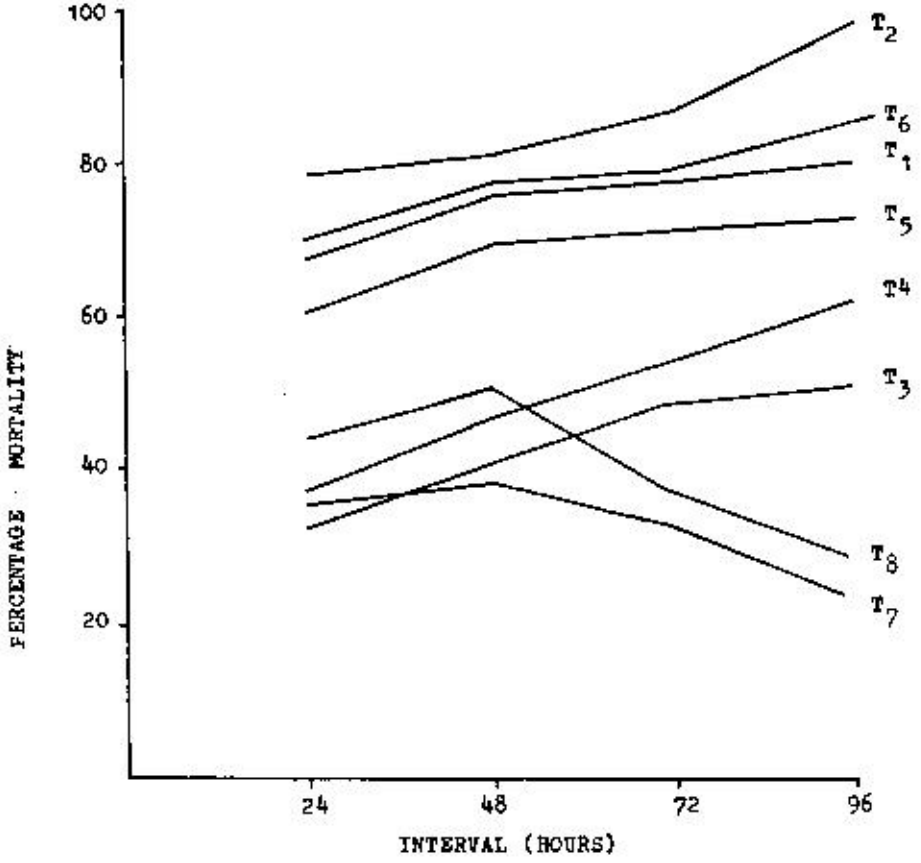

Fig. 2. Percentage mortality of adults of Tetranychus cucurbitae Rahman and Sapra with different insecticides/acaricides at different post-treatment time intervals.

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